

Obligations Process and 123 Agreement Communications

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Obligations Process and 123 Agreement Communications

Goals

What is the function of foreign obligations?

NMMSS requirements for obligations

123 Agreement Communications

What are foreign obligations?

NMMSS reporting problems commonly experienced

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IT'S THURSDAY AND THE MOUNTAINS ARE CALLING...

Obligations



You Gotta have a gimmick??

A little fun??

Lighten it up??

Communications

IT'S THE FOURTH DAY OF GREAT TRAINING...

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Foreign Obligations

- Foreign obligations = Assurances that material or equipment is transferred pursuant to an Agreement for Peaceful Nuclear Cooperation
- Agreements for Cooperation are necessary, per Section 123 of the Atomic Energy Act of 1954, as amended
- Allow U.S. to trade nuclear material and equipment with foreign countries

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Foreign Obligations (continued)

- Items subject to an Agreement are “obligated”
- Material can have multiple obligations
- Safeguard and peaceful use guarantees
 - Official Government to Government notice
 - Facilities are asked to verify material is for peaceful uses and will be made subject to the agreement
 - Assurances must be given prior to ship

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Foreign Obligations (continued)

- 94% of foreign obligations are held at NRC facilities
- Periodic reporting: all activity reported to foreign governments originate from 741 data

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U.S. Bilateral Agreements for Peaceful Nuclear Cooperation Pursuant to Section 123 of the Atomic Energy Act of 1954, as amended Agreements in Force as of April 2010

- Argentina
- **Australia**
- Bangladesh
- Brazil
- **Canada**
- China
- Colombia
- Egypt
- **European Atomic Energy Community (Euratom)**
- Indonesia
- India
- International Atomic Energy Agency (IAEA)
- **Japan**
- Kazakhstan
- Korea, Republic of
- Morocco
- Norway
- Romania
- South Africa
- **Switzerland**
- Taiwan
- Thailand
- Turkey
- Ukraine
- United Arab Emirates

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Obligation Material Types

Type	Domestic Code	Import/Export Code	Reportable Unit of Measurement
Depleted Uranium	10	D	Kilogram Uranium
Enriched Uranium	20	EG	Gram Uranium Gram U-235
Plutonium	50	P	Gram Plutonium
Natural Uranium	81	N	Kilogram Uranium
Thorium	88	T	Kilogram Thorium

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Country Obligation Codes

Code	Country Obligation	Code	Country Obligation
31	Australia	82	Canada/Japan
32	Canada	83	Euratom/Japan
33	Euratom	84	Australia/Euratom/Japan
34	Japan	85	Canada/Euratom/Japan
35	People's Republic of China	86	China/Japan
37	Switzerland	87	Australia/Japan
38	Argentina	88	Australia/Canada/Euratom
39	Brazil	91	Australia/Euratom
40	Chile	92	Canada/Euratom
81	Australia/Japan		

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Nuclear material flows are international in nature, which result in uranium from many sources being routinely mixed during processes such as conversion and enrichment.

PROPORTIONAL...

As obligated nuclear material is mixed with other obligated material, and is processed or irradiated, acquires obligations in the original proportions.



EQUIVALENT...

Should Obligated nuclear material change characteristics through processing (i.e. mixing), equivalent quantities of the products may be derived based on operating plant parameters.

At any processing stage, uranium from one source is identical to uranium from any other.

FUNGIBLE...

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Accounting for Obligations

- Account for material as it flows through the fuel cycle
 - Accurate reporting of obligations to imports/exports
 - Proportional assignment of obligations to material inventories
 - Equivalent assignment of obligations to production and losses with facilities

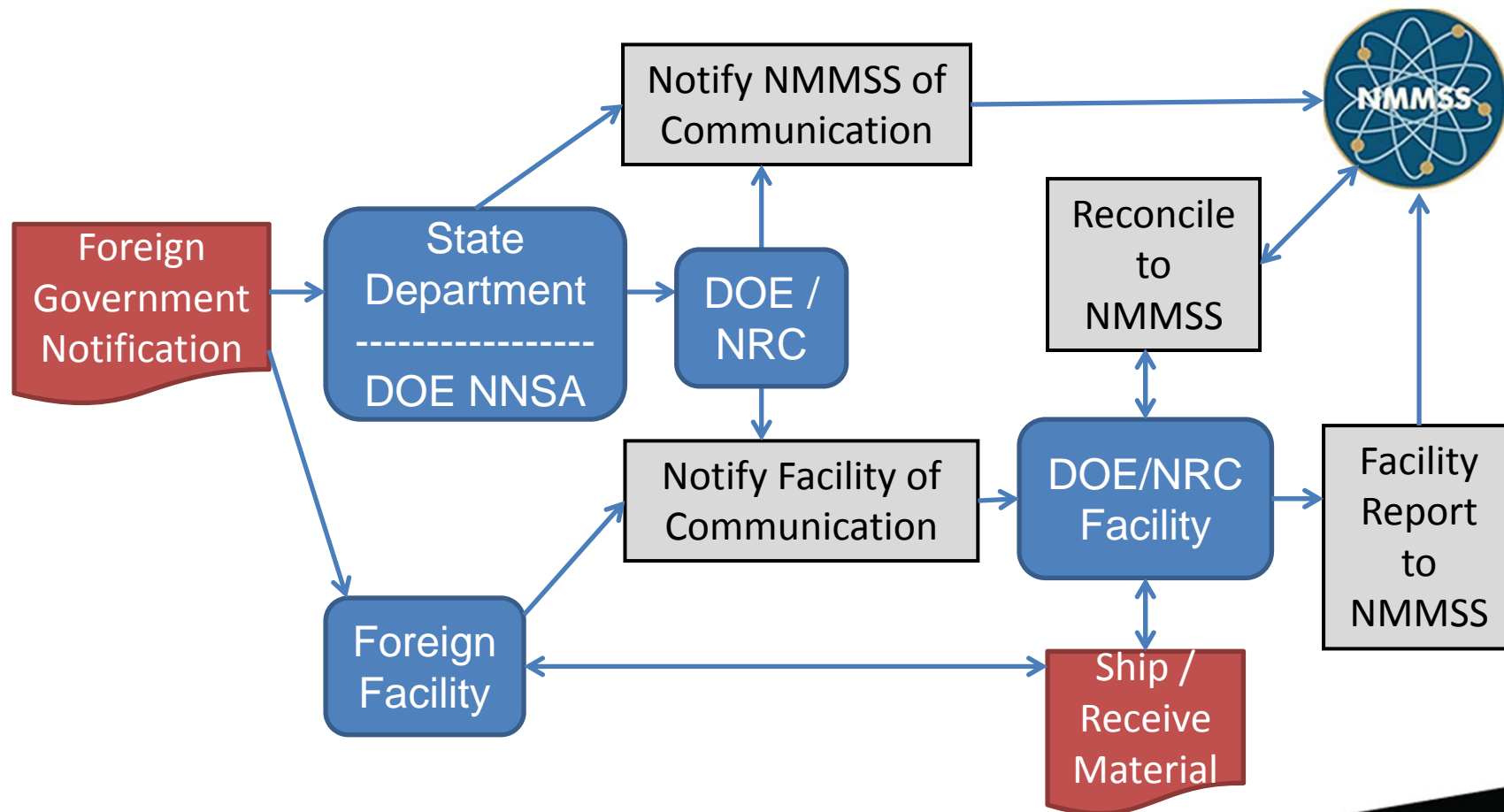
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Functional Application

- Accurate assignment of obligations to material as it flows through the fuel cycle
- Record proportional obligations to both material inventories and production and losses within facilities
- Report and reconcile obligations with the NMMSS
- NMMSS receive 123 agreement communications
- NMMSS applied universal approach to recording 123 agreement communications
- NMMSS transit match communications with reported obligations

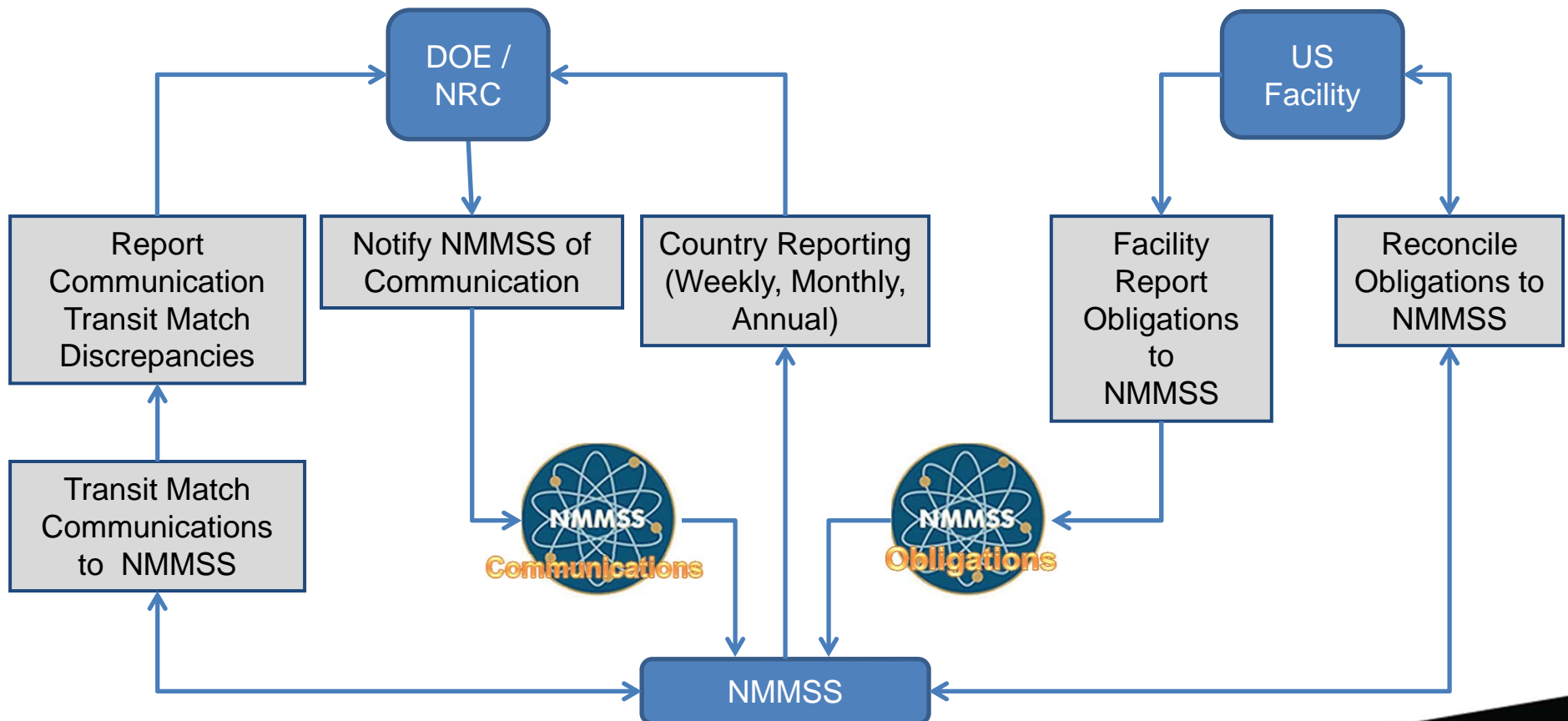
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Obligations Accounting Notification Process



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NMMSS Obligations/Communications Process



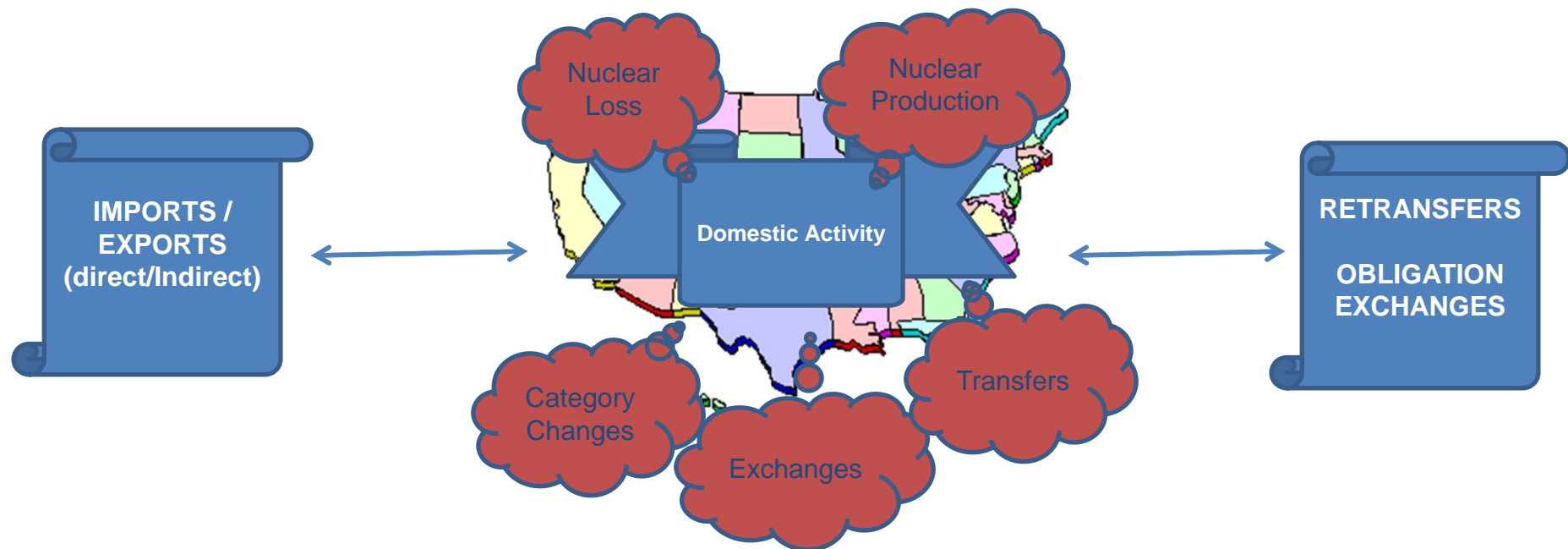
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123 Agreement Communications

- Uranium as it moves through the different stages of the nuclear fuel cycle
- Material generated through the use of Uranium (i.e. production of plutonium, irradiation of Uranium fuel)
- Maintain transfer and retransfer information contained in foreign government notifications or other diplomatic documents from U.S. Agreement partners
- Investigate inquiries from Agreement partners concerning foreign obligated nuclear material

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Conditions that Drive Obligation Communications



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Typical Domestic NMMSS 741 Increases/Decreases

Increase

Production

From other
Materials

Decrease

Fission &
Transmutation

Normal
Operational
Loss

Rounding
Bias

Degradation
to other
Materials

Decay

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Prior Notifications

- Typical process regarding Prior Notifications
 - Facility associated with entity applies for license
 - Entity issues Prior Notification Communication to U.S.
 - Assure material, upon receipt, will be subject to the terms and agreement of the associated 123 agreement
 - Proposed recipient has authorization to receive material
 - Proposed recipient accepts responsibility to physically protect material.
 - U.S. Acknowledges receipt of request

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Confirmation Notifications

- Typical process regarding Confirmation Notifications
 - Entity issues Confirmation Communication to U.S.
 - If a retransfer, Entity issues Confirmation Communication to respective 3rd Country/Entity
 - U.S. Acknowledges receipt of confirmation

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Transshipment Notifications

- U.S. receives notifications from Entity for material moving through U.S. Ports
 - Purpose to assure that material will be protected while in the jurisdiction of the U.S.
 - Australia is the primary issuer of Transshipment Notifications

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Other Notifications

- Prior Notifications to Industry (DOE)
- Annual Forecasts
- International Obligation Exchanges

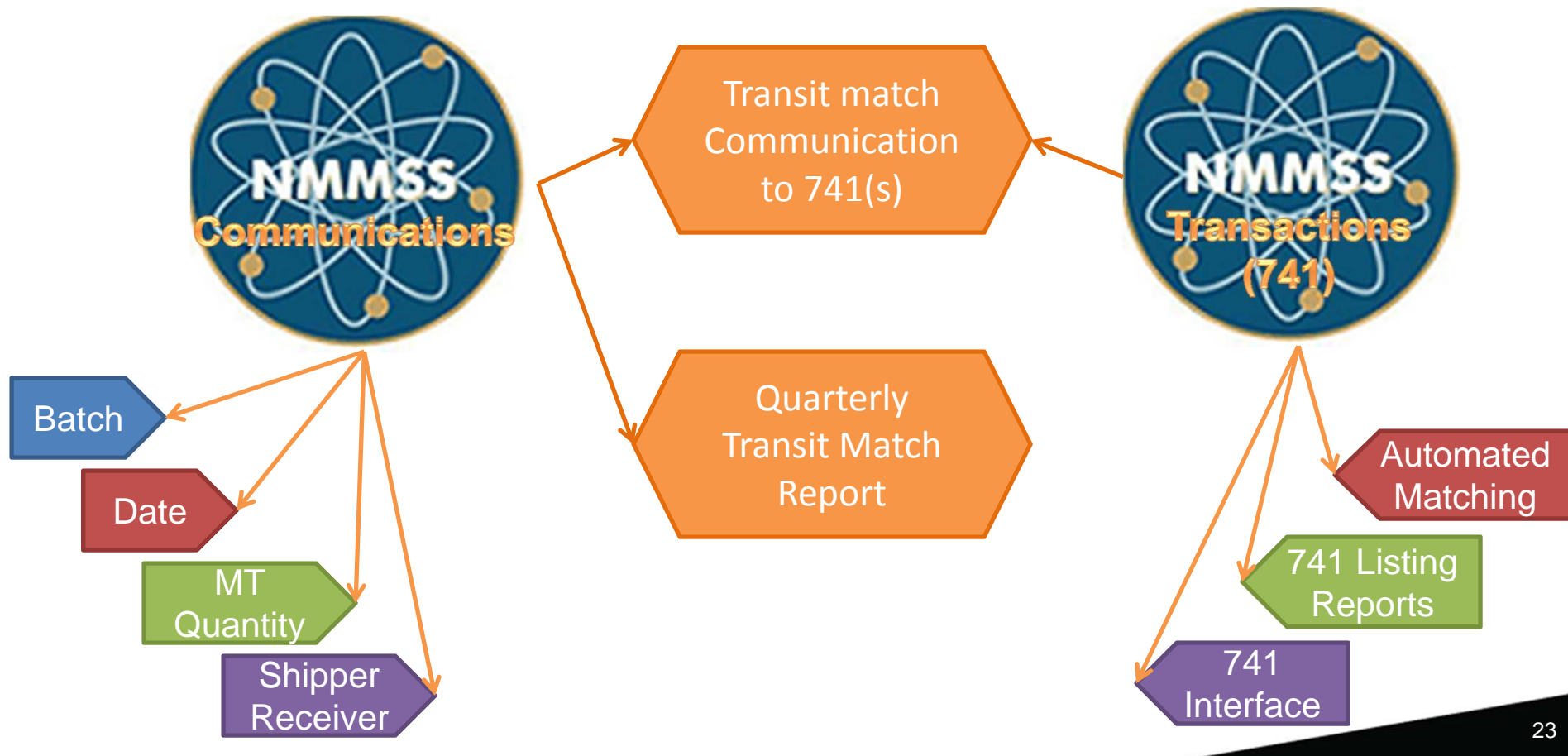
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Communication Transit Matching

- Pair foreign government notifications to NMMSS transaction data
- Perform notification follow-up with facilities as necessary based on transit matching activity
- Quarterly transit matching report produced

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Transit Matching Process



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Example: The Life and Times of Old Yeller!

ONCE UPON A TIME...

Uranium Mine



IN A FAR AWAY LAND
(AUSTRALIA)...

THERE LIVED "OLD YELLER"

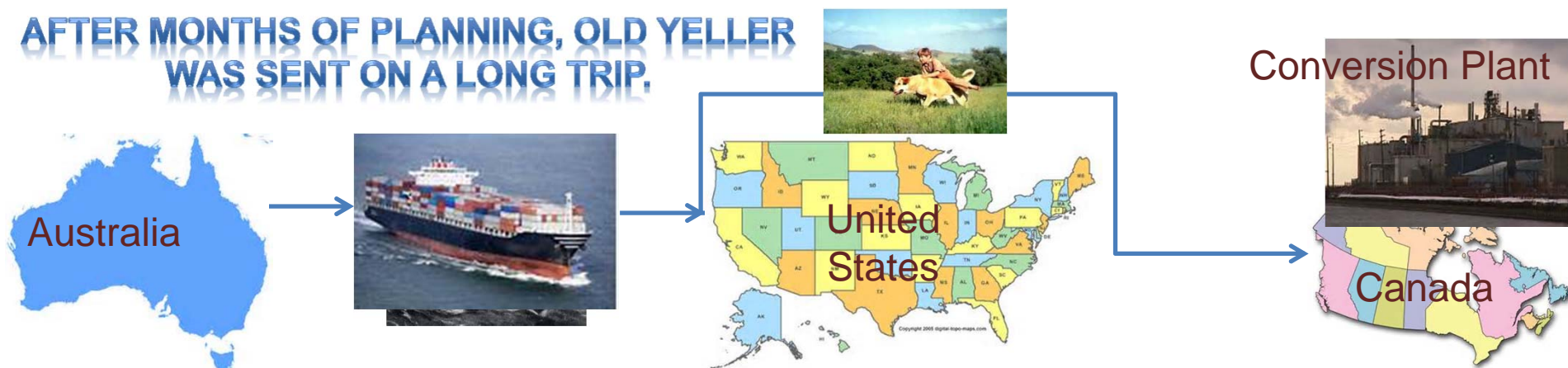


Yellow Cake
(MT 81)



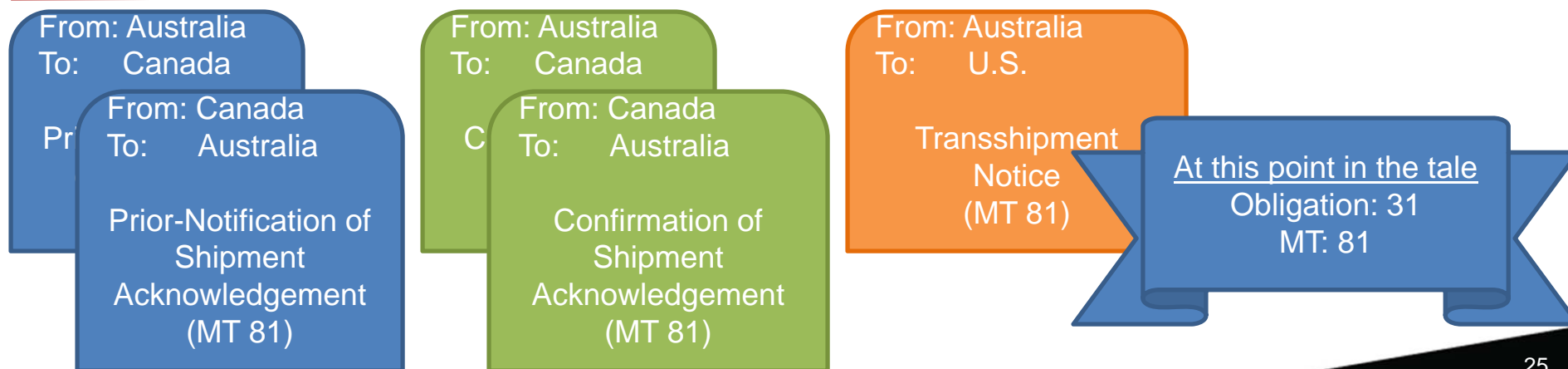
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AFTER MONTHS OF PLANNING, OLD YELLER WAS SENT ON A LONG TRIP.



TO A NEW HOME..

123 Agreement Documents



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AFTER GETTING A “MAKEOVER” IN CANADA, OLD YELLER WAS PURE AND OFF ON ANOTHER TRIP!



AND YET ANOTHER NEW HOME..

123 Agreement Documents

From: Canada
To: Euratom

From: Euratom
To: Canada

Prior-Notification of
Shipment
Acknowledgement
(MT 81)

From: Canada
To: Euratom

From: Euratom
To: Canada

Confirmation of
Shipment
Acknowledgement
(MT 81)

From: Canada
To: Australia

From: Australia
To: Canada

Notification of
Retransfer of
Obligations
Acknowledgement
(MT 81)

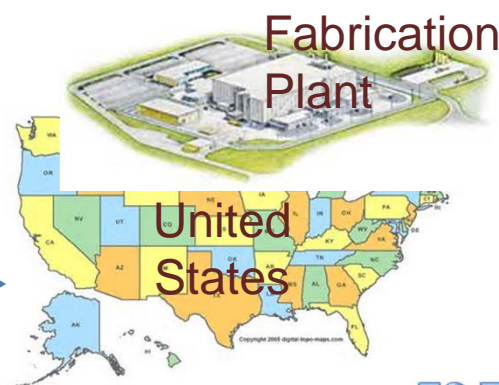
Note

Canadian MT 81 was used
in conversion of Australian
MT 81.

At this point in the tale
Obligation: 87
(Australia/Canada)
MT: 81

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EVEN THOUGH OLD YELLER EXPERIENCED SOME BIG CHANGES IN FRANCE, YET AGAIN HE WAS ON THE ROAD!



TO THE UNITED STATES...

123 Agreement Documents

From: Euratom
To: U.S.
From: U.S.
To: Euratom
Prior-Notification
Shipment
Acknowledgement
(MT 20,10)

From: Euratom
To: U.S.
From: U.S.
To: Euratom
Confirmation of
Shipment
Acknowledgement
(MT 20,10)

From: Euratom
To: Australia
From: Australia
To: Euratom
Notification of
Retransfer of
Obligations
Acknowledgement
(MT 20,10)

From: Euratom
To: Canada
From: Australia
To: Canada
Notification of
Retransfer of
Obligations
Acknowledgement
(MT 20,10)

Note

Assume that product and tails from enrichment sent to U.S.

At this point in the tale
 Obligation: 88
 (Australia/Canada/Euratom)
 MT: 20, 10

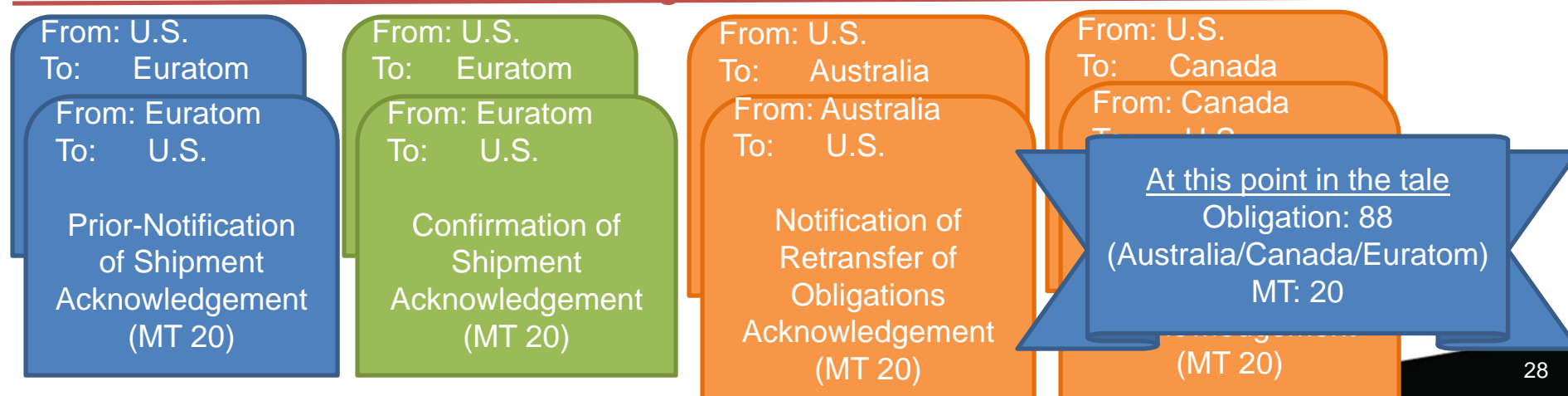
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OLD YELLER WAS FABRICATED AND READY TO GO!



BACK TO EURATOM...

123 Agreement Documents



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EVENTUALLY OLD YELLER'S WORKING DAYS
 WERE COMPLETE ---- OFF TO RETIREMENT...

Power
 Reactor



Spent Fuel
 Pool

Nice story, but
 what IS the
 point?

AND A LIFE OF LEISURE

AND SPIRITUAL FULFILLMENT!

Converted



France



Enriched



Fabricated

"NO MATTER HOW HE CHANGES, NEVER FORGET ABOUT 'OLD YELLER' !"

- Track obligations throughout the fuel cycle
- Obligations may become layered as obligations progress through the fuel cycle
- Obligations must be applied proportionally through category changes and blending

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Typical Obligation/Communication Challenges

Obligations not reported on NMMSS 741

Batch from NMMSS 741 does not match 123 Communication

Obligations not reported on NMMSS Material Balance Report

NMMSS 741 quantity does not match 123 Communication

Batch absent from NMMSS 741 and/or 123 Communication

3rd Country Obligation on 123 Communication not reflected on NMMSS 741

Material type from NMMSS 741 does not match 123 Communication

Incorrect obligation code specified on NMMSS 741

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Where was the fun part?



Gimmick! Really?

Any Questions?

OTHER THAN...

Well, let me just say the goal of making your presentation light worked!